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ABSTRACT

Reliability and validity data on a procedure for identification of students "at risk" for exhibiting behavior disorders are presented. The Systematic Screening for Behavior Disorders instrument relies upon teacher judgment and normative criteria in three interrelated stages that cross validate the results of each other. Stage 1 has teachers rank students on both "externalizing" and "internalizing" behavioral dimensions. Stage 2 involves teacher completed rating measures on adaptive and maladaptive behavior while Stage 3 includes observation in classroom and free play settings which are used to confirm other measures. Data are presented on a districtwide trial involving 158 classroom teachers in 16 schools. Observation data on 301 elementary grade students confirm the accuracy of this cost effective procedure in identifying children exhibiting behavior disorders. (Author)

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STANDARDIZED MASS SCREENING OF AT-RISK STUDENTS: A MULTIPLE GATING APPROACH

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Standardized Mass Screening of "At Risk" Students: A Multiple Gating Model

Abstract:

Reliability and validity data on a procedure for identification of students "at risk" for exhibiting behavior disorders is presented. Systematic Screening for Behavior Disorders (SSBD) relies upon teacher judgment and normative criteria in three interrelated stages that cross validate the results of each other. Stage One has teachers rank students on both "externalizing" and "internalizing" behavioral dimensions. Stage Two involves teacher completed rating measures on adaptive and maladaptive behavior while Stage Three includes observation in classroom and free play settings which are used to confirm other measures. Data is presented on a district wide trial involving 158 classroom teachers in 16 schools. Observation data on 301 elementary grade students confirm the accuracy of this cost effective procedure in identifying children exhibiting behavior disorders.

STANDARDIZED MASS SCREENING OF AT RISK STUDENTS: A MULTIPLE GATING MODEL

Surveys of school district practices in the certification of students as behavior disordered (BD) or severely emotionally disturbed (SED) consistently yield results that suggest high levels of dissatisfaction with current assessment procedures which are often conducted by school psychologists who perceive themselves as inadequately trained for this task (Gresham, in press). Reflecting current levels of issatisfaction with such practices, the Haring et al (1985) study of BD assessment and service delivery practices in Washington State, identified two areas of critical need: 1) the need for agreement with regard to identification and eligibility criterion for students with severe behavior disabilities, and 2) the need to develop and implement a comprehensive assessment procedure for this population. Additionally, research literature has documented the subjective and arbitrary nature of assessment procedures used with BD children (Gerber and Semmel, 1984).

In response to need for a standardized assessment procedure, Drs. Walker and Severson developed a screening instrument entitled, Systematic Screening for Behavior Disorders (SSBD) (Walker, Severson & Haring, 1985). The assessment procedure provides for cost-effective, mass screening of all children who are enrolled in regular

classrooms and links: a) definition criteria, b) screening and assessment procedures, and c) normative based eligibility decision making into one self-contained system. This model relies heavily upon structured teacher judgment of child behavioral characteristics in the first two assessment stages and uses normatively referenced observational data to provide independent in vivo assessments of the child's functioning within instructional and free play settings in Stage Three. The results of assessment and decision making in initial stages are cross validated by increasingly more intensive assessments in subsequent stages or "gates." This multiple gating assessment model provides a cost effective system for screening and identification of elementary grade children "at risk" for exhibiting behavior disorders (Figure 1).

Stage One of the screening procedures asks the classroom teacher to rank order students on two behavioral dimensions. The first dimension is on <u>externalizing</u> behavior problems which are behaviors directed outwardly by the child toward the external social environment and usually involve behavioral excesses. The teacher also ranks students on <u>internalizing</u> behavioral problems that are directed inwardly and frequently involve behavioral deficits as well as patterns of social avoidance. This bipolar classification system has been found consistently in factor analytic studies of behavioral disorders (Ross, 1980). The structured teacher judgments involved in

externalizing and internalizing behavior problems are ranked relative to classroom peers.

Stage Two procedures involve the completion of behavior rating scales and critical behavioral indices for the top three ranked children on both behavioral dimensions from Stage One. Students at Stage Two are compared with behavioral norms for these rating scales and if they exceed cut-off scores, the child is assessed using Stage Three direct observation procedures.

Stage Three involves two areas of behavioral observation: 1) within class Academic Engaged Time (AET), and 2) observation of Peer Social Behavior (PSB) in a free play setting.

The authors of the SSBD screening instrument have conducted pilot research and field test trials to establish reliability and discriminative validity for this instrument. Inter-rater reliability coefficients for externalizing behavior dimensions range from .89 to .94 and internalizing behavior dimensions range from .73 to .88. Test/retest reliability coefficients on teacher rankings with a one month time interval were .76 for externalizers and .74 for internalizers.

Coefficient alpha was completed for cumulative frequency indices in Stage Two instruments. For adaptive behavior the coefficient alpha was .85 and .88 in two cohorts of 108 pupils each. For the maladaptive behavior the figures were. 82 and .87. Item analysis on these

scales revealed consistent positive items to total score correlations. The classroom and peer interaction observation codes also appear very reliable. Inter-observer reliability of the AET classroom code was .96 (range .84 to 1.0) on 39 reliability checks, while the PSB code had a mean reliability of .88 (range .80 to 1.0) in 63 reliability checks (Table 2).

The PSB observation data clearly shows that students identified by the classroom teacher as exhibiting externalizing or internalizing behavior differ significantly both from non-identified "normals" or control subjects and each other. Observation data shown in Tables 2, 3, and 4 reveals significant differences in observed behavior for all three groups ($p<.01$). The observers were blind to the classification done by teachers. The results of the observations indicate that the behavior patterns identified by teachers in the Stage One ranking procedures are confirmed by independent observers. Students classified as internalizers, who are most often overlooked by referral sources, exhibit significantly more Alone behavior, Parallel Play, and are less Socially Engaged. Children classified as externalizers exhibit high levels of Participation, but also high levels of Negative Social Interaction.

As a further test of the ability of the SSBD to screen for at risk students the data from Stages Two and Three was subjected to a discriminant function analysis. This

analysis (shown in Table 5 shows a high level of classification efficiency with 85% of the cases being correctly classified. The eight variables that enter into the discriminant function are shown in Table 6 with the Wilk's Lamda for each variable. Note that Adaptive Behavior and Maladaptive Behavior as rated by teachers on Stage Two instruments were the first two factors. Playground observation (PSB) variables that contributed most to the prediction of Stage One classification were Parallel Play, Social Involvement, Negative Interaction, and Social Engagement. A review of Table 2 (combined sex groups) indicates the specific direction of each of these variables.

The results of Stage Two behavior rating scales confirm the teacher discriminations made on Stage One. The results shown in TABLE 7 show significant differences in the three groups for all three measures at Stage Two. While these measures are also completed by the teacher and one would expect correspondence with their rankings at Stage One, the instruments at Stage Two are behaviorally specific and involve a measure of frequency. Results of the Critical Events Checklist indicate that externalizers display twice as many problematic behaviors when compared to controls. All group differences and sex differences are in the expected direction and of significant magnitude ($p<.01$).

Table 8 shows the results of the classroom observations completed on 298 subjects. There were significant differences in Academic Engaged Time (AET) between non-identified (control) subjects and both internalizers and externalizers. Previous research has also shown significant differences between the internalizing and externalizing groups (Walker, et al 1984). The non-significant results for this sample may be due to a large number of observations being completed on lower ranked students (on Stage One) because parents of children ranked first by the teacher refused to provide positive consent to observe their child.

Our research group has now completed the third year of developmental research on the screening procedures. The instrument has proven to be highly reliable, and cost effective for identifying students that are exhibiting behaviors that put the child "at risk" for subsequent behavior disorders. The current data is from a district wide assessment of the SSBD system. This study involved 158 teachers from 16 schools completing Stage One and Stage Two instruments. Project staff observed 97 classrooms and 301 children from grades one through five. We now have the beginning of a norm sample of children with which to compare teacher ratings and observed behavior in both classroom and playground settings. This federally funded project will continue to assess the use of this screening procedure with field implementation trials in several

school districts in the 1987-88 school year. The project is also collecting "student record searches" to provide an additional validation of the screening procedure. This assessment of academic performance, standardized achievement scores, referrals and discipline contacts will be analyzed to determine the differences in these measures for students identified by the screening procedure. Follow-up longitudinal tracking of highly ranked students will also determine the stability of these rankings across classroom environments.

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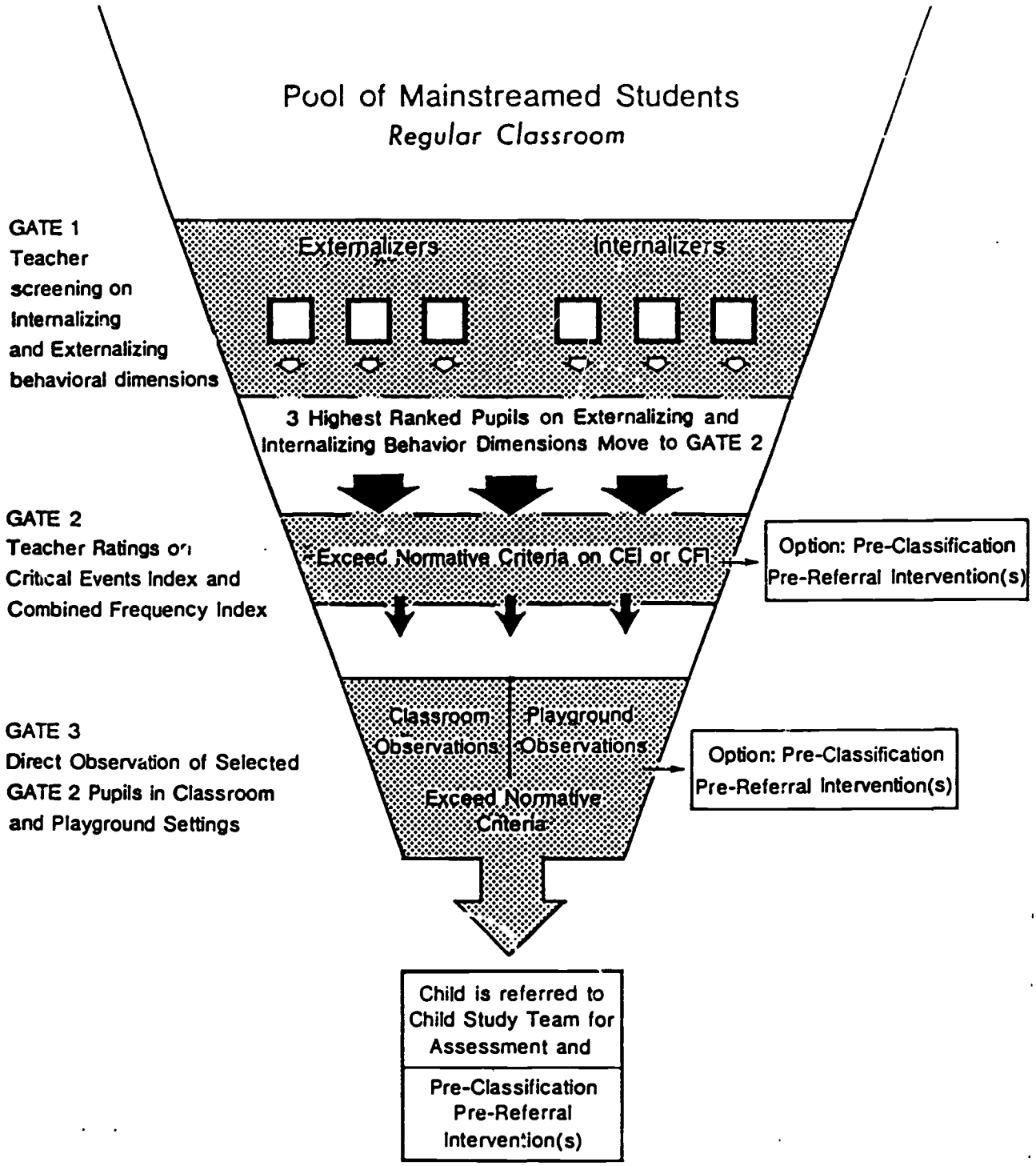

Figure One

Multiple-Gating Assessment Procedure for Identification of Behavior Disordered Students

TABLE 1

RELIABILITY OF OBSERVATION INSTRUMENTS (SSBD)

Total Observations	n = 772		
Playground	386		
Classroom	386		
Reliability Checks	n = 102	13.4%	(102/772)
Playground	63	16.3%	(63/386)
Classroom	39	10.5%	(39/386)

Reliability Coefficients $\bar{X}$ of Playground = .88 Range = .80 to 1.00

$\bar{X}$ of Classroom = .96 Range = .84 to 1.00

TABLE 2

SSBD PEER SOCIAL BEHAVIOR OBSERVATIONS
MALES & FEMALES

PSB Dependent Variable	Externalizers (n=73) $\bar{X}$ SD	Internalizers (n=76) $\bar{X}$ SD	Controls (n=152) $\bar{X}$ SD
1 Socially Engaged (SE)	30.1[3] 16.8	27.4[2] 13.1	35.1 15.3
2 Socially Involved (SI)	32.9[1,3] 15.6	43.9 15.3	40.9 16.2
3 Participation (P)	22.6 28.7	7.4[2] 16.1	14.2 22.6
4 Parallel Play (PLP)	5.8[1] 7.5	10.7[2] 10.6	4.9 7.5
5 Alone (A)	6.1 8.3	8.6[2,3] 10.0	3.5 5.5
6 No Codeable Response	1.5 1.7	1.7 3.6	1.3 2.0
7 Social Interaction (SE + SI)	64.7 26.4	71.5 19.5	76.0 22.2
8 Positive Interaction (SE + SI +)	58.8[1] 25.3	69.9 19.6	75.2 21.9
9 Negative Social Interaction (SE - + SI -)	5.4[1,3] 7.5	1.8 4.2	1.4 2.9
10 Total Positive Behavior (SE + SI + P) (+)	80.5[1] 17.2	77.2[2] 18.2	88.6 11.5
11 Total Negative Behavior	6.0[1,3] 7.9	1.8 4.2	1.9 5.6

1 = Externalizers vs. Controls $p<.05$
2 = Internalizers vs. Controls $p<.05$
3 = Externalizers vs. Internalizers $p<.05$

TABLE 3

SSBD PEER SOCIAL BEHAVIOR OBSERVATIONS

MALES ONLY

PSB Dependent Variable	Externalizers (n=73) $\bar{X}$ SD	Internalizers (n=76) $\bar{X}$ SD	Controls (n=65) $\bar{X}$ SD
1 Socially Engaged* (SE)	29.9 16.5	26.3 11.1	31.5 15.2
2 Socially Involved (SI)	32.6 16.1	45.6 15.7	38.7 18.9
3 Participation* (P)	24.6 29.6	8.0 16.9	20.2 26.9
4 Parallel Play* (PLP)	5.1 5.8	10.5 9.1	4.3 6.5
5 Alone (A)	6.2 8.5	7.9 8.6	4.1 6.1
6 No Codeable Response	1.6 1.9	1.1 1.9	1.2 1.7
7 Social Interaction* (SE + SI)	63.6 26.6	72.4 18.1	69.7 25.7
8 Positive Interaction* (SE + SI +)	57.6 25.1	69.8 18.5	68.7 25.3
9 Negative Social Interaction (SE - + SI -)	5.4 7.6	2.9 6.5	1.8 3.4
10 Total Positive Behavior (SE + SI + P) (+)	81.1 15.6	77.7 15.4	87.9 11.5
11 Total Negative Behavior	6.0 7.9	2.7 5.4	2.8 7.5

*sex differences $p<.05$

TABLE 4

SSBD PEER SOCIAL BEHAVIOR OBSERVATIONS

FEMALES ONLY

PSB Dependent Variable	Externalizers (n=8) $\bar{X}$ SD	Internalizers (n=37) $\bar{X}$ SD	Controls (n=76) $\bar{X}$ SD
1 Socially Engaged* (SE)	38.8 18.0	28.5 14.9	38.7 14.6
2 Socially Involved (SI)	35.3 12.2	42.1 14.8	43.1 12.8
3 Participation* (P)	6.7 11.2	6.8 15.5	8.3 15.3
4 Parallel Play* (PLP)	11.5 15.2	10.9 12.1	5.6 8.5
5 Alone (A)	5.3 6.9	9.3 11.8	2.9 4.8
6 No Codeable Response	1.0 1.6	2.4 4.6	1.3 2.3
7 Social Interaction* (SE + SI)	74.3 24.0	70.6 21.1	82.3 15.8
8 Positive Interaction* (SE + SI +)	68.6 26.1	70.0 20.9	81.8 15.5
9 Negative Social Interaction (SE - + SI -)	5.6 7.7	.7 1.8	1.0 2.3
10 Total Positive Behavior (SE + SI + P) (+)	75.7 28.4	76.7 20.9	89.3 11.5
11 Total Negative Behavior	5.6 7.7	.8 1.9	1.0 2.3

*sex differences $p<.05$

TABLE 5

DISCRIMINANT FUNCTION ANALYSIS

Actual Group	Number of Cases	Predicted Group Membership		
		Non-Identified	Externalizer	Internalizer
Non-Identified	150	142 94.7%	2 1.3%	6 4.0%
Externalizer	69	4 5.8%	56 81.2%	9 13.0%
Internalizer	75	13 17.3%	11 14.7%	51 68.0%

Percent of "grouped" cases correctly classified: 84.69%

TABLE 6

ORDER OF VARIABLES IN SSBD DISCRIMINANT FUNCTION

Step	Entered	Vars in	Wilks' Lambda	Significance
1	Adaptive	1	.37379	.000
2	Maladptive	2	.27463	.000
3	Parallel Play	3	.25754	.000
4	Critical Events	4	.24364	.000
5	Social Involvement	5	.23258	.000
6	Negative Interaction	6	.22124	.000
7	Social Engagement	7	.21690	.000
8	Academic Engaged Time	8	.21381	.000

TABLE 7

SSBD STAGE TWO INSTRUMENTS

	Externalizers		Internalizers		Controls	
	Males (n=247)	Females (n=56)	Males (N=142)	Females (n=150)	Males (n=116)	Females (n=109)
Critical Events Index						
$\bar{X}$	3.2	3.1	1.9	2.2	2.1	1.6 [1,2,3]
SD	2.6	2.9	1.8	1.9	2.4	2.1
Combined Frequency Index Adaptive Behavior						
$\bar{X}$	3.05	3.08	3.59	3.84	3.54	4.0 [1,2,3]
SD	.64	.65	.66	.66	.84	.80
Maladaptive Behavior						
$\bar{X}$	2.77	2.76	1.73	1.66	2.13	1.71 [1,2,3]
SD	.68	.80	.55	.49	.88	.72

1 = Controls vs. Externalizers $p<.01$
2 = Controls vs. Internalizers $p<.01$
3 = Externalizers vs. Internalizers $p<.01$

TABLE 8

SSBD CLASSROOM OBSERVATIONS

		Externalizers (n = 70)	Internalizers (n = 75)	Controls (n = 153)
Academic Engaged Time (AET)	$\bar{X}$	65	73.1	77.7
	SD	18.1	15.2	13.7

Controls vs. Externalizers $p<.01$
Controls vs. Internalizers $p<.03$